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ABSTRACT

This paper examines the use of science fiction to predict the future. First, science fiction is compared to other fiction literature forms; then the changes in science fiction over the last 20 years are discussed. The influence of recent scientific advances on science fiction is also presented. The generation of alternative scenarios of the future is considered the most valuable function of science fiction as a predictor. (MA)

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HARUSPICATING WITH SCIENCE FICTION

OR

THROUGH THE LOOKING GLASS — DIMLY

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HARUSPICATING WITH SCIENCE FICTION, OR
THROUGH THE LOOKING GLASS -- DIMLY

Challenge

J.B.S. Haldane suspected, as he put it . . ."that the universe is not only queerer than we suppose, it's queerer than we can suppose." As suspicions go, this is probably among man's loftier, and perhaps most durable as well. Beyond this, it is an elegant statement of the challenge accepted by the science fictioneer.

What is Science Fiction?

In conventional fiction, a human drama holds the center of the stage. The environment serves as an appropriate backdrop for the drama. We know about the arctic ice, the desert sand, ballrooms, city streets, hovels and palaces, whether or not we have had first-hand experience with them. However these settings may influence the drama, they do so in a way which is familiar.

If we establish an axis across the universe along which we can increasingly modify the reality of the world we know, conventional fiction lies at one extreme. At the farthest end of this axis we can appropriately place a type of fiction known as fantasy. In fantasy, as you know, anything goes. The laws of nature as we know them aren't violated because they don't exist in this domain. The writer creates his own world and sets his own constraints. Magic is substituted for natural law.

Although most fantasy is intended as pure entertainment, its flexibility has historically made it a popular vehicle for one of the powerful and durable literary forms, satire. The durability of some

satire is such that it remains popular long after its historical relevance has been forgotten, such as the Mother Goose Rhymes. We now call them Nursery Rhymes because they provide a means of introducing children to the concept of excessive violence while they are still of pre-school age.

Between the polar extremes of conventional fiction and fantasy we find a long stretch of the axis, which we could call the region of experimental extrapolation. Science fiction may be found in this region. Here the laws of nature remain intact although occasional modifications are acceptable. For example, Arthur Clarke finds speeds faster than light to be acceptable but our guest, Isaac Asimov, does not.

The setting for a science fiction drama may be extrapolated in part or totally from the familiar world. However, it is more than just an appropriate backdrop. The environment more often than not is a key element of the drama, sometimes the controlling element. Hal Clement, a writer of great skill and meticulous technical accuracy, enjoys establishing his dramatic problem through creating an environment in which one dimension, such as temperature (Ice World) or gravity (A Mission of Gravity) has been sufficiently extrapolated to present real problems to the players. In the case of Ice World, the problem is one of trade and communication between the normal Earth and some orbiting visitors who evolved on a world where an ambient of 800 ^{o}F was normal. To them, the Earth, a place where water can exist as a liquid, appeared to be a bizarre and frigid place which had somehow allowed even stranger forms of life (including man) to evolve. The everyday Earth and man are thus viewed in a fresh perspective -- by aliens who see us and our

world in ways we have never seen or thought about.

Poul Anderson, another master of the experimental environment, takes his readers for a ride that's hard to forget in "Tau Zero," as he translates Einstein's consequences of approaching the speed of light into high drama. Again, in his short story, "Kyrie," Anderson explores Einstein's time dilation as experienced by one of his characters who is irretrievably captured by the gravitational field surrounding a black hole, and spirals down toward it, forever.

These examples illustrate the manner in which science fiction achieves its sole purpose -- which is to entertain. Since it is characterized by a plausible extrapolation, it is a matter of convenience that much of it, but not all, occurs in the future.

Does Science Fiction Forecast the Future?

When space flight became a reality, a sizable portion of the public developed a new respect and interest in science fiction as prophesy. After all, Jules Verne had forecast a lunar flight a hundred years ago, using a launch site very close to Cape Kennedy. In the 1930s, Buck Rogers defended himself with ray guns much like the laser weapons now being tested. Nuclear power, televised images, intelligent robots, and other sentient machines, planetary visitations, zero gravity living, and cavorting on the moon in low gravity were all staples of science fiction well before they appeared in reality. However, the number of commonalities which have come to pass between the fictioneers' scenarios and the real world have prompted some writers, outside the field, to observe that science fiction is passe "now that the real world has caught up with it." Of course, this is nonsense.

No matter what the state of the art, extrapolations beyond it are no more difficult than they ever were. But the rather large body of the literature which now exists, that same body from which the above "foresights" were selected, has been dealt a blow by recent scientific achievements. No respectable author would begin his scenario from a data base he knew to be at variance with reality. Bradbury's Mars has changed. He can no longer create those almost poetic short stories requiring a thin but breathable atmosphere nor can he describe the plant growth nourished by soft rain. His contributions retain their charm and beauty but hard knowledge of Mars has now taken away an important requirement -- that the scenario be plausible.

Venus, as a site for adventure, dominates a sizable block of science fiction literature. There was a general consensus among authors that Venus was hot, steamy, and unparalleled for swamps -- super swamps teaming with bizarre animals and covered with all manner of vegetation. Venus, not Earth, was the real "watery planet." While the adventure may still be there, plausibility left forever when our probes reported surface heat that would make lead run like water and a super dense atmosphere of noxious dry gases. We now know that the only swamps left in the solar system are the relatively dull ones here on Earth. An author needing a decent swamp will henceforth be required to leave the solar system.

Of course there are many other instances where new knowledge converts a plausible science fiction scenario into instant nostalgia. But, the point is made: in the scenarios of science fiction the concepts which emerge in reality are counterbalanced by others that do not.

The future which is forecast by science fiction is a plausible but experimental one intended to mesh with a human drama the writer has conceived. The setting may test the mettle of the players but as they interact with it,

the players also test the logic of the setting. Jack Williamson, another giant in the field, describes a science fiction story as a "people machine." If the drama and the setting are intermeshed properly, the machine will run and the story will be told.

Now we conclude that the largest body of literature about the future turns out not to be about the future we or our descendants will see. Does this literature have value to the futurist beyond its main purpose of entertainment? The answer is yes.

Science Fiction as a Methodology

Everyone is familiar with certain types of forecasting, the most common one being the "contingency" plans. These come into being to minimize or circumvent the consequences of short-lived, undesirable events such as power failures in a hospital or the collapse of a dam. They are rigidly coupled to specific events and aren't too useful to the broader interests of the futurist.

A step considerably beyond this, but also disaster-oriented, is the military scenario. In the better of these, the assumption is made that a disaster has occurred, such as the simultaneous loss of New York City and Detroit, due to a nuclear attack. The scenario accounts for all losses, e.g. life, industrial capability, and damages to the Nation's banking and fiscal integrity, records, etc.

The next step attempts to describe, as completely as possible, how the Nation will function during the week following the disaster, during the first half-year and first year. At this point, the scenario becomes pure fiction. Subplots are generated, each based on a different prospect. If the loss of the banking and industrial records resulted in the collapse of the mone-

tary system, the national condition would develop quite differently than in another plot in which it held firm. Will the public panic to the point of social collapse -- abandoning all major cities to roam the countryside as starving marauders? Scenarios can be made to cover thousands of possible situations. Yet, should we really lose New York and Detroit, the probability is close to a certainty that none of the scenarios correctly anticipate the national condition -- though there would be points of coincidence. Is the exercise therefore futile? Not at all.

In preparing them, the very fabric of the social and economic system has been unwoven and rewoven. Many of its critical aspects have been toyed with, teased, and seen in entirely new perspectives. Should the disaster happen, the studies would serve to eliminate many resulting surprises and reduce the shock of others. The main product of the scenarios, a more flexible perspective, would greatly enhance the quality and effectiveness of leadership decisions during the aftermath.

Science fiction assumes an altered environment and develops scenarios in a similar manner. It differs in that its inspiration is not a disaster but an idea. Its logic is tested to the extent that it is animated by characters and a plot. Its novel perspectives and manipulations of social systems, environmental settings, or physical laws become part of its entertainment.

As a predictor of the real future, science fiction is no better than an air force scenario, but there is a possibility that its method of animating the scenario may tighten the logic and it's a certainty it would be more pleasurable to read.